

# **MERRIAM MOUNTAINS SPECIFIC PLAN**

## **APPENDIX X**

### **WETLANDS AND UPLANDS CONCEPTUAL REVEGETATION PLANS**

GPA 04-06; SP 04-006; R04-013; VTM5381; S04-035, S04-036, S04-037,  
S04-038; Log No. 04-08-028; SCH No. 2004091166

*for the*

### **DRAFT ENVIRONMENTAL IMPACT REPORT**

**August 2007**

**Note:** This appendix reflects project details current at the time the August 2007 Draft EIR was distributed for public review. As noted in the preface to the March 2009 Recirculated EIR, some project details and analysis have changed since that time and those details are reflected in the Recirculated EIR and appendices.

# **MERRIAM MOUNTAINS SPECIFIC PLAN**

## **WETLANDS AND UPLANDS CONCEPTUAL REVEGETATION PLANS**

**May 2007**

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# **Wetlands and Uplands Conceptual Revegetation Plans Merriam Mountains Specific Plan**

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# **Wetlands and Uplands Conceptual Revegetation Plans**

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### **1.0 INTRODUCTION**

This conceptual mitigation and revegetation plan provides conceptual guidelines for the mitigation and revegetation of various upland and wetland habitats associated with the Merriam Mountains project. This is intended as a guide to the proposed acreages and locations for various mitigation needs for the project, which would occur both on site as well as off site at yet to be determined locations. This plan would be further refined at a later date, once detailed locations have been worked out. The conceptual guidelines presented herein would be used as the basis of design for the final plan.

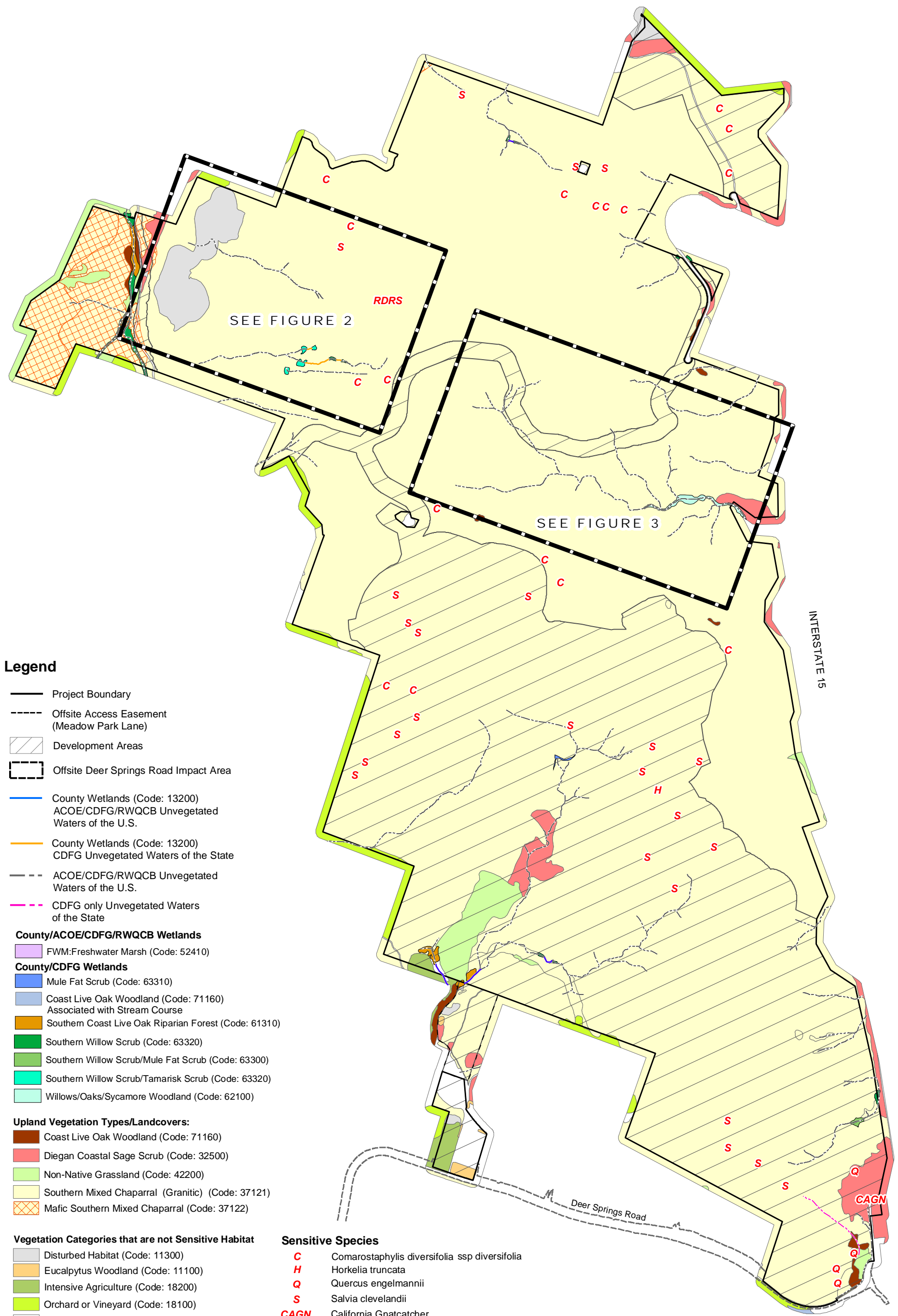
### **1.1 Project Setting**

The Merriam Mountains project (Merriam) consists of approximately 2,327 acres located with the Merriam Mountains of northern San Diego County. The site is bordered by I-15 to the east, Deer Springs Road (S12) to the south, and Twin Oaks Valley Road to the west with a small portion of the western edge of the site traversed by Twin Oaks Valley Road, and the northeast corner of the site traversed by Lawrence Welk Drive. Gopher Canyon Road is located approximately 1 mile north of the site (see *Figures 1 and 2*).

The site lies within the central portion of the Merriam Mountains, a narrow chain of low mountains generally running north to south with a variety of east-west trending ridgelines and scattered peaks. These mountains originate near the northern end of the urban portions of the cities of Escondido and San Marcos. Large granite outcroppings and pinnacles commonly occur throughout the Merriam Mountains range on the property.

Natural topography on the sites is comprised of hills and valleys dominated by significant rock outcroppings with moderate to steeply sloping terrain. On-site elevation ranges from approximately 850 feet above mean sea level (AMSL) near the intersection of Deer Springs Road and I-15 to about 1,650 feet AMSL in the north central portion of the property. Prominent, generally east-west trending ridgelines divide the site into five separate drainage basins tributary to Moosa Canyon, Gopher Canyon, and San Marcos Creek.

Vegetation on the Merriam site consists of large blocks of southern mixed chaparral with scattered patches of other upland and wetland vegetation, such as Diegan coastal sage scrub, coast live oak woodlands, and southern willow scrub. Due to the extensive nature of the chaparral covering most of the site, wildlife movement is generally confined to existing dirt roads and the main drainages running through the project. Two well-developed riparian areas exist on site, one west of I-15 draining into the South Fork of Moosa Canyon and one in the south fork of Gopher Canyon, between the Merriam Mountains and the San Marcos Mountains.



County Wetlands/Vegetation & Species Data Source: Pacific Southwest Biological Services, Inc.

# Wetlands and Uplands Onsite Mitigation Conceptual Revegetation Plan Index

MERRIAM MOUNTAINS SPECIFIC PLAN  
WETLANDS AND UPLANDS CONCEPTUAL REVEGETATION PLAN

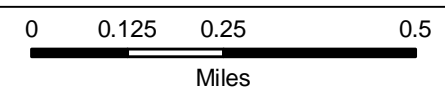
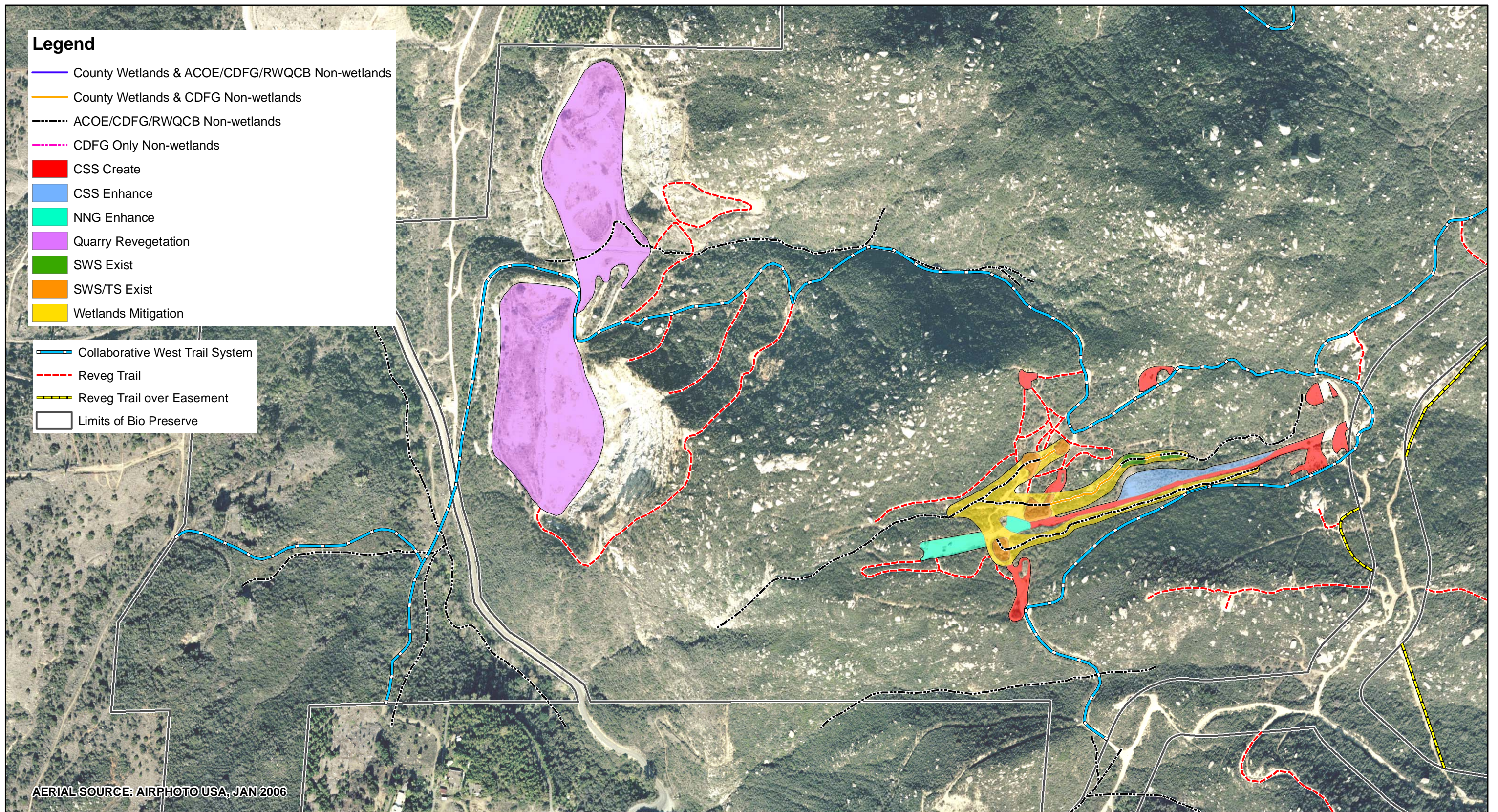


FIGURE 1





Willow Scrub Wetlands and Coastal Sage Scrub Uplands Revegetation at Abandoned Airstrip and Quarry

FIGURE  
2



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### **1.2 Uplands and Wetlands Mitigation Requirements Purpose and Function**

The Merriam Mountains project would result in impacts to both wetland and upland habitats. Impacts to wetlands would occur through both on-site development and off-site roadway improvements along Deer Springs Road and would be mitigated at a 3:1 ratio. The anticipated locations of both upland and wetland habitat mitigation sites on site are identified on *Figures 1* and *2*. The proposed grading and planting requirements for the mitigation/revegetation areas, guidelines for preparation of a Final Mitigation and Monitoring Plan, guidelines for preparation of Final Revegetation Construction Documents, Implementation Requirements, Maintenance Requirements, Monitoring Requirements, Long-Term Management, and Success Standards Criteria have been provided herein to address the mitigation requirements for both wetlands and uplands habitats.

### **2.0 CONCEPTUAL WETLAND MITIGATION AND REVEGETATION PLAN**

The following section addresses the conceptual guidelines for mitigation and revegetation for wetland impacts from the project.

#### **2.1 Wetland Mitigation Requirement Summary**

The proposed Merriam Mountains project will impact wetlands both inside the project boundaries as well as off site. Wetland resources within the study area have been categorized as either County of San Diego, Resource Protection Ordinance (RPO) wetlands, or as other jurisdictional waters outside of County jurisdiction. A detailed analysis of wetland resources and impacts incurred by the proposed project are provided in Section 3.3 (Wetlands) of the *Merriam Mountains Specific Plan, Appendix F, Resource Protection Study* (Dudek, June 2007). On-site impacts will result from the proposed development and infrastructure improvements. In addition, impacts would occur due to the road widening improvements along Deer Springs Road. Impacts to wetlands will require compensatory mitigation and will be provided at a 3:1 mitigation ratio. Mitigation for wetland impacts to southern willow scrub/mulefat scrub, mulefat scrub, southern willow scrub, and non-vegetated channel from the development will occur on site within the preserved biological open space. The remainder of the mitigation acreage for impacts to coast live oak woodland (associated with streamcourse) and southern coast live oak riparian forest will be provided both on site within biological open space, as well as off site at yet to be determined locations adjacent to the project. The off-site goal would be to find locations within the same



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watershed areas to the degree possible and where reasonable opportunities exist for wetlands creation and riparian habitat expansion.

The required wetland mitigation acreages required by the project are shown in *Table 1*.

**TABLE 1**  
**Wetlands Mitigation Requirement for Development Impacts**

Habitat Category	Total Impact*	Mitigation Ratio	Mitigation Acre
Southern coast live oak riparian forest	1.3	3:1	3.9**
Coast live oak woodland (CLOW) associated with streamcourse	0.1	3:1	0.3***
Southern willow scrub/mulefat scrub	0.3	3:1	0.9***
Mulefat scrub (MFS)	0.2	3:1	0.6***
Southern willow scrub (SWS)	0.3	3:1	0.9***
Non-vegetated channel (subject to ACOE permit)	0.8	1:1	0.8***
Unvegetated Wetlands	0.1	3:1	0.3***
<b>Total</b>	<b>3.1</b>		<b>7.7</b>

\* Impacts include both on site as well as off site.

\*\* Mitigation to be provided at an off-site location to be identified.

\*\*\* Mitigation to be provided on site through creation/enhancement.

## 2.2 Wetland Mitigation On Site

The potential for wetland mitigation creation and enhancement on site was evaluated by Dudek within the project boundaries and only two suitable locations were identified. Several other small wetland patches within the project boundaries were evaluated, but were either determined to be too constrained from existing utilities locations (e.g., the San Diego County Water Authority pipeline along Twin Oaks Valley Road), were too small in size, or were in terrain too steep to allow for any reasonable wetland mitigation/revegetation effort (e.g., the two isolated wetland southern willow scrub patches in the north central portion of the site), or were already surrounded by existing native habitat and did not allow for wetlands expansion without impacting other adjacent native habitat. The chosen locations offer the best opportunities to achieve reasonably-sized wetland mitigation creation and enhancement areas that could ultimately become self sustaining over time.

### 2.2.1 Southern Willow Scrub and Mulefat Scrub Mitigation On Site

The chosen locations for southern willow scrub and mulefat scrub mitigation on site are in proximity to the old airstrip area, in the north central portion of the site, in a location which will be preserved as part of the project's permanent biological open space. In this location, several

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(i.e., six) remnant patches of southern willow scrub (SWS) and southern willow scrub/tamarisk scrub (SWS/TS) vegetation exist along several intermittent drainages that run through the area. This location lies in a broad valley with a primary drainage running through it, predominantly from east to west. Secondary drainages enter from both the south and north sides of the valley and join the main drainage before it drops down the canyon to the west through existing southern mixed chaparral habitat.

This area was previously disturbed by the grading of an old historic airstrip, from the grading of access roads, as well as from disturbances from previous off-road vehicle use and trash/debris dumping. The area has subsequently been invaded by several exotic/invasive species, including salt cedar (*Tamarix* sp.), pampas grass (*Cortaderia selloana*), and fennel (*Foeniculum vulgare*). From the evidence of the existing remnant wetland vegetation present, including willow scrub species (i.e., primarily arroyo willow [*Salix lasiolepis*] and mulefat [*Baccharis salicifolia*]), it appears as though there is sufficient intermittent drainage and groundwater resources present at this location to support the survival of wetland SWS and MFS species. From the distribution of the remnant patches of SWS and MFS vegetation scattered throughout the site, it appears that there may have been a larger stand of southern willow scrub habitat present in this location at some previous point in time, prior to the site disturbances. As a result, it appears that the current wetland resources in this location could be expanded upon and enhanced to provide a larger contiguous area of wetland habitat. Preliminary estimates indicate that approximately 4.2 acres of wetland creation and 0.7 acre of wetland enhancement could be achieved within this location, for a total of approximately 4.9 acres of wetland mitigation credit (see *Figure 1*). Impacts to willow scrub wetlands (i.e., southern willow scrub/mulefat scrub, mulefat scrub, southern willow scrub, and non-vegetated channel) only require 3.6 acres to be mitigated on site through creation/enhancement at the abandoned airstrip (see *Figure 2*). The final configuration of these mitigation areas will be determined during preparation of the final mitigation plan and revegetation construction documents.

The mitigation/revegetation goal in this old airstrip location would be to remove the exotic/invasive species (i.e., tamarisk, pampas grass, and fennel), remove all trash and debris, restore drainage connections through grading to eliminate the off-road vehicle trails and roads through the area, and to plant appropriate wetland plant species to support the habitat expansion and enhancement. Grading would be conducted to re-create the main drainage, as well as to establish some new drainage connections to the secondary drainages. Grades would be established to place the proposed wetland revegetation areas in better proximity to the intermittent drainage flow, as well as to take advantage of subsurface groundwater conditions. This will allow for the connection of the remnant patches of SWS and MFS vegetation, and would help provide larger contiguous SWS and MFS habitat areas. This will also help provide improved functions and



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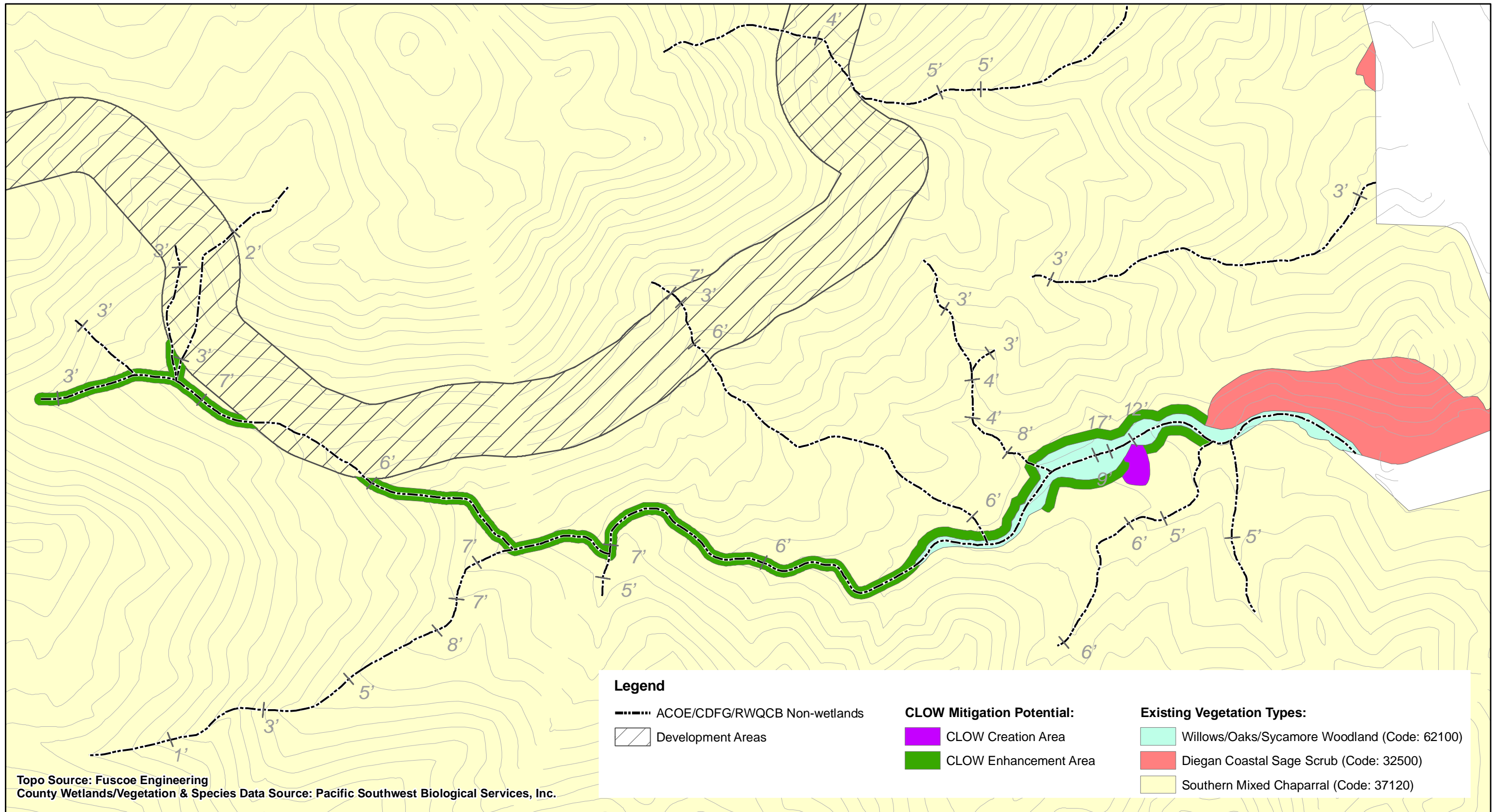
values for the remnant SWS and MFS patches and will help expand upon wetland resources in this location. This will also provide additional water quality improvements by helping to treat on-site drainage run-off through the filtering effect of wetland vegetation. This will also help provide important wildlife resources and habitat expansion in this location.

### **2.2.2 Coast Live Oak Woodland (associated with stream) Mitigation On Site**

The chosen location for the coast live oak woodland (associated with stream course) mitigation acreage was selected within the main drainage of the biological open space that runs from west to east towards I-15. This location currently supports willow/oak/sycamore woodland in the lower easterly end of the drainage, near I-15, and includes numerous scattered coast live oaks interspersed along the drainage as it runs through southern mixed chaparral to the east (*see Figure 3*). It is felt that these areas could support some limited creation acreage, as well as more extensive enhancement acreage to add additional coast live oaks along the margins of the drainage, in order to help enhance and expand upon habitat diversity.

### **2.3 Wetland Mitigation Off Site**

Impacts to oak riparian wetlands (southern coast live oak riparian forest and coast live oak woodland (associated with stream course) will require a total of 4.2 acres of mitigation acreage. This will be accommodated both on site (i.e., within biological open space) as well as off site at yet to be determined locations. These sites will be determined as part of the final design and preparation of a Final Revegetation Plan that will be prepared at a later date, prior to issuance of grading permits. Off-site wetland mitigation potential was evaluated by Dudek and several prospective off-site locations/parcels have been identified. Several of these areas present opportunities for both oak woodland and oak riparian forest mitigation, as needed by the mitigation program to provide the needed mitigation acreage. The final selection of the off-site mitigation parcel/s has not been completed at this time due to the difficulty in identifying suitable acquisition parcels and available land. The final selection of the site/s and the detailed final revegetation plans (i.e., construction documents/plans and specifications) for the various wetland mitigation areas will be required as a condition of approval and will need to be approved prior to initiation of rough grading of the first phase of the development.



Coast Live Oak Woodland Mitigation Potentials at Main Onsite Open Space Drainage

FIGURE  
3



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### **2.4 Grading and Planting Requirements for the Wetland Mitigation Areas**

The areas proposed for wetland mitigation/revegetation shall be adequately excavated/graded to provide appropriate planting elevations relative to the intermittent drainage flow through the areas, as well as to subsurface groundwater resources and based upon the desired habitat to be developed in each location. Designated areas of disturbance, and/or areas to receive grade modifications within the wetland mitigation/revegetation areas, will be revegetated with appropriate native wetland species. Adequate stability of graded areas and planting locations will be achieved through the use of erosion control measures and/or through appropriate planting in order to provide adequate soil stability to resist erosion. Down-grading (i.e., excavation) of soils in the disturbed upland areas adjacent to the wetlands will take place in order to convert disturbed upland vegetation to wetlands. This will occur in order to provide the appropriate elevations relative to ground water resources, and/or secondary drainage flow hydrology, in order to provide the appropriate wetland conditions to support the intended native wetland species over the long-term. Fine grading will be achieved within the intended wetland creation areas to establish final planting elevations and to help create micro-topography to help reduce creek flow velocities, spread out the water flow, and maximize retention and deposition of sediment and pollutants. Wetland vegetation in the creation and enhancement areas will be selected to expand upon the existing wetland resources, optimize uptake of pollutants, and help provide water quality improvements where feasible.

All plant materials specified for the wetland revegetation areas will be native species appropriate to the area and will be compatible with the existing adjacent native habitat areas. Plant material selections, sizes, and quantities will be appropriate to help assure adequate plant establishment and to help achieve the goal of self sustainability of the revegetated habitats by the end of an initial 5-year time frame. A mixture of container plantings, cuttings, and seeding will be utilized as appropriate to the areas being planted and as specified on the final conceptual mitigation plan and the final revegetation construction documents (i.e., plans, details, and specifications).

Soil conditions in the areas to be revegetated will be tested and evaluated by a soil and plant laboratory in order to determine soil fertility and agricultural suitability for the intended vegetation and habitat types. Amending of infertile soils may be necessary if soils analysis results indicate that deficiencies exist within the site soils that could affect the growth of the intended native species. All amending requirements will be specified on the final revegetation construction documents.

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### **2.5 On-Site and Off-Site Wetlands Revegetation Mitigation and Monitoring Plan**

A final wetlands mitigation and monitoring plan (i.e., written report, Mitigation Plan) will be prepared to provide installation, maintenance, and monitoring guidelines for the intended wetland mitigation/revegetation program for both the on-site as well as off-site locations. The report will provide conceptual guidelines addressing the required mitigation program, the implementation guidelines, maintenance strategies, monitoring and reporting requirements, and ultimate success standards by which the program will be evaluated. The Mitigation Plan will include the goals of the program and the implementation guidelines and will include preliminary plan view layouts showing the various intended on-site and off-site revegetation areas. The report will also include plant palette tables indicating the intended revegetation plant materials, their intended size, spacing on center, and densities and compositions for the various intended wetland creation and enhancement areas.

### **2.6 Final Revegetation Construction Documents**

A set of final revegetation construction documents (i.e., plans, details and specifications) will be prepared by a State of California registered landscape architect/habitat restoration designer in order to implement the biological intent for the various mitigation/revegetation areas, as outlined in the final mitigation plan. The construction documents shall be prepared for all on-site and off-site mitigation areas. The plans may be a comprehensive set showing all sites, or separate sets of plans, depending upon the intended revegetation/mitigation implementation phasing strategy. The construction documents shall detail all site preparation and demolition, grading, irrigation, planting, seeding, and maintenance requirements for the wetland mitigation/revegetation areas. The construction documents shall be of sufficient detail for bidding and construction of the mitigation/revegetation areas.

The construction documents shall be reviewed and approved by the County and the appropriate resource agencies, based upon permitting requirements, prior to actual implementation.

### **2.7 Implementation Requirements**

All wetland mitigation/revegetation areas will be installed per the requirements outlined in the final revegetation construction documents (i.e., plans, details and specifications) and shall be maintained for an initial 120-day plant establishment maintenance period. The implementation and maintenance shall be conducted by a licensed Landscape Contractor (State of California C-27) familiar with native wetland and upland revegetation projects. The contractor shall have a



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minimum of 3 years of experience in native habitat mitigation installation and maintenance, and shall be able to demonstrate the successful completion of a minimum of three wetland mitigation projects in Southern California.

The implementation of the wetland mitigation program shall be monitored by a habitat restoration specialist/biologist familiar with the implementation of wetland mitigation programs. The monitor shall verify and document the installation of the revegetation areas, both on site as well as off site, and shall monitor the installation and maintenance effort periodically as necessary during the initial installation, as well as during the initial 120-day plant establishment period. The monitor shall provide periodic site observation status reports and a final letter report at the end of the 120-day plant establishment period in order to document the successful completion of the initial implementation phase.

### **2.8 Maintenance Requirements**

All mitigation/revegetation areas will be maintained during an initial 120-day plant establishment maintenance period following installation and then throughout a 5-year maintenance and monitoring period until successful fulfillment of the project's success criteria. All maintenance procedures shall follow the guidelines established in the conceptual mitigation plan report document and the final conditions of the county and resource agencies. The goal will be to help foster adequate plant establishment, as well as to control non-native weeds and exotic plant species, so that the intended native species and habitats can develop and establish over time as anticipated. The maintenance contractor shall provide sufficient maintenance to assure survival of the mitigation/revegetation plantings until they can survive on their own without artificial support and can become self sustaining.

### **2.9 Monitoring Requirements**

All mitigation/revegetation areas will be monitored during the installation, including throughout the initial 120-day plant establishment period, and then throughout the 5-year maintenance and monitoring period, in order to help assure project success. Monitoring shall be conducted by a qualified habitat restoration designer/biologist in order to implement the biological intent for the mitigation/revegetation program. Qualifications for the monitor shall be outlined in the Conceptual Mitigation and Monitoring Plan (Mitigation Plan).

Biological monitoring will be conducted to evaluate the progress of the revegetation/mitigation program both qualitatively (i.e., visually) and quantitatively (i.e., data collection and analysis). Periodic monitoring visits and reporting will be conducted as specified in the Mitigation Plan.

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The project will be assessed against specific success standards and criteria as defined in the Mitigation Plan. Year-end monitoring reports will be prepared and submitted to the applicable parties and agencies as documentation of the progress of the project.

At the end of the designated 5-year maintenance and monitoring period, the project will be visited by all appropriate parties and agencies in order to determine completion of the 5-year program and acceptance by the permitting agencies.

### **2.10 Success Criteria**

Specific success criteria shall be outlined in the Final Mitigation Plan. Criteria shall be established for each intended wetland habitat type to be revegetated and or enhanced as part of the overall wetland mitigation program. The criteria shall outline the intended standards for each year of the program through 5 years, and will include percent cover of native species, percent cover of non-native/exotic species, and tree height goals for selected representative tree species. The criteria shall outline appropriate remedial measures and procedures that should be implemented in any given year should the success criteria not be met.

### **2.11 Long-Term Management**

All wetland mitigation areas shall ultimately become part of preserved biological open space. The on-site areas will be part of the on-site biological open space preserve area. The off-site parcels shall be protected in perpetuity through the establishment of conservation open space easements over the designated parcels. All wetland mitigation areas will be managed as part of the overall open space area, per the long-term management measures outlined in the Resource Management Plan.

## **3.0 CONCEPTUAL UPLAND REVEGETATION PLAN**

### **3.1 Upland Revegetation Requirement Summary**

The proposed Merriam Mountains project will impact various upland habitats. Upland mitigation acreage will be provided on site in current disturbed or ruderal areas where reasonable opportunities exist for upland habitat creation and restoration, as well as off site at various locations. The proposed on-site revegetation sites include the old airstrip/runway location and numerous off-road trail and roadway areas that were previously disturbed by prior site activities. Acreage also includes portions of the old rock quarry areas that can reasonably support upland habitat creation/restoration.

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The proposed on-site and off-site upland mitigation acreages are shown in *Table 2*.

**TABLE 2**  
**Upland Mitigation Requirements for Development Impacts**

Habitat Category	Total Impact*	Mitigation Ratio	Preserved On Site	Mitigation Acre
Diegan coastal sage scrub	27.3	2:1	5.5	49.1*
Non-native grassland	20.7	0.5:1	3.7	6.6
Coast live oak woodland (upland only)	2.3	3:1	1.9	5.0**
<b>Total</b>	<b>51.3</b>			<b>68.2**</b>

\* Impacts include both on site as well as off site.

\*\* Mitigation partially compensated for through acquisition of Captain's Associates parcel at an off-site location.

### 3.2 Upland Mitigation

The potential for upland mitigation creation and enhancement acreage on site was evaluated by Dudek within the project boundaries and several suitable locations were identified. The chosen locations offered the best opportunities to achieve reasonably sized upland mitigation/revegetation areas that could ultimately become self-sustaining over time and connect with existing upland resources within the adjacent habitat areas.

One of the chosen on-site upland mitigation locations is in proximity to the old airstrip area, in the north central portion of the site, in a location which will be preserved as part of the project's permanent biological open space (see *Figures 1* and *2*). This location would be contiguous with and adjacent to the proposed wetland mitigation/revegetation area that is addressed in previous sections. This location is surrounded primarily by chaparral vegetation, with some minor patches of remnant wetland vegetation. This location lies in a broad valley with an ephemeral drainage running through it, which drains from east to west. Secondary drainages enter from both the south and north sides of the valley and join the main drainage before it drops down the canyon to the west through existing southern mixed chaparral habitat. The disturbed areas within this site are the result of past off-road vehicle activities, which created numerous trails and roadways through the chaparral habitat.

Much of this area was previously disturbed by activities associated with the old historic airstrip, associated access roads, disturbances from previous off-road vehicle use, and trash/debris dumping. Much of this area has subsequently been invaded by several exotic/invasive species, including salt cedar (*Tamarix* sp.), pampas grass (*Cortaderia selloana*), and fennel (*Foeniculum vulgare*). Much of the native vegetation has been invaded and displaced by these invasive/exotic species. This area lies adjacent to an area that is also proposed for wetland mitigation/



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revegetation, which will strive to link existing remnant wetland vegetation, including patches of arroyo willow (*Salix lasiolepis*) and mulefat (*Baccharis salicifolia*). The proposed upland revegetation effort would be along the margins of the proposed wetland revegetation areas and will help provide a better vegetated upland buffer adjacent to the wetland mitigation areas.

Preliminary estimates indicate that there are approximately 2.0 acres of upland CSS creation area and approximately 0.7 acre of upland CSS enhancement area that could be achieved within this old airstrip location. Also, at this location, as well as elsewhere throughout the open space area, there are approximately 7.7 acres of old roadways and trails that could be revegetated to restore native upland habitat lost from the previous site activities. This number excludes those roadways that would be used for the permanent on-site trail system, as well as those roads that lie in existing water utility easements that might be needed for future pipeline access. In addition, there are approximately 14 acres of disturbed area at the base of the two old rock quarry sites that could be revegetated to a combination of CSS and non-native grassland (NNG) habitat. Thus, overall there would be a total of approximately 25.0 acres of potential upland CSS and NNG mitigation/revegetation acreage within the entire biological open space area on site (see *Figures 1 and 2*). The remainder of the mitigation requirement would be satisfied through habitat acquisition, preservation, and revegetation off site.

The mitigation/revegetation goal would be to create and restore Diegan coastal sage scrub (DCSS) and non-native grassland (NNG) habitat within disturbed portions of the biological open space areas on site to provide enhanced native habitat quality. The required mitigation for Diegan coastal sage scrub would include a DCSS/grassland mosaic restoration on site at the airstrip and at the quarry sites (see *Figure 2*).

To achieve this, the mitigation/revegetation program will need to remove the exotic/invasive species, remove all trash and debris, and eliminate the off-road vehicle trails and roads through these areas. Once this is completed, appropriate upland plant species would be installed to support the intended habitat expansion/creation and enhancement. Finish grading would be conducted within the upland mitigation/revegetation areas to eliminate compaction and to restore appropriate soil conditions to facilitate plant growth. Grades would be established to blend better with the adjacent native habitat areas and to eliminate erosion scars where necessary. This will thereby allow for the connection of the remnant patches of chaparral and Diegan coastal sage scrub vegetation, and would help provide a larger contiguous upland DCSS/chaparral area. This will also help provide improved habitat quality for the remnant upland patches and will help expand upon upland resources throughout the biological open space. This will also help provide important wildlife resources, habitat connectivity and expansion.

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Required mitigation for non-native grassland, consisting of 6.6 acres of non-native grassland, would be achieved through planting of grassland in yet to be determined disturbed locations within on-site biological open space. A grassland seed mix is provided below in *Table 3, Transitional Grassland Seed Mix* and would be utilized for seeding in these areas following appropriate site preparation.

**TABLE 3**  
**Transitional Grassland Seed Mix**  
(to be seeded within designated transitional grassland revegetation areas)

Botanical Name	Common Name	PLS	Lbs./Acre
<i>Collinsia heterophylla</i>	Chinese houses	88%	2.0
<i>Encelia californica</i> *	Bush sunflower	24%	3.0
<i>Eschscholzia californica</i>	California poppy	74%	2.0
<i>Lotus scoparius</i>	Deerweed	54%	6.0
<i>Plantago insularis</i>	Plantain	74%	10.0
<i>Sisyrinchium bellum</i>	Blue-eyed grass	71%	2.0
<i>Lasthenia glabrata</i>	Goldfields	30%	2.0
<i>Lupinus bicolor</i>	Dove lupine	78%	4.0
<i>Mimulus aurantiacus</i> *	Sticky monkeyflower	4%	4.0
<i>Nassella pulchra</i>	Purple needlegrass	42%	5.0
<b>Total Lbs. Per Acre</b>		<b>40.0**</b>	

\* Indicates locally collected seed from coastal San Diego County.

\*\* Hydroseed slurry: Seed mix – at rates indicated above, virgin wood fiber mulch @2,000 lbs./acre, binder ("Az-Tac" or approved equal) @ 100 lbs./acre (or approved equal), commercial fertilizer (0-45-0) @ 400 lbs. per acre green slurry marker dye.

The 5 acres of required mitigation for impacts to coast live oak woodland would occur both on site as well as off site within yet to be determined locations. Existing oaks within the fuel modification areas on site will be trimmed up for fuel modification purposes rather than being removed.

### 3.3 Site Preparation, Grading, and Planting Requirements for the Upland Mitigation/Revegetation Areas

The areas proposed for upland mitigation/revegetation both on site as well as off site shall be adequately prepared prior to planting. Site preparation shall include clearing and grubbing of all non-native/exotic species and disposal off site at an appropriate facility. All man-made trash and debris shall also be removed and disposed of properly off site. The areas shall then be finish graded where appropriate to provide uniform planting elevations relative to the adjacent upland vegetation.

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Stability of graded areas and planting surfaces will be achieved through the use of erosion control measures and through appropriate planting and seeding in order to provide adequate erosion protection adjacent to any existing drainages. Upland vegetation in the creation and enhancement areas will be selected to expand upon the existing upland resources and habitat areas.

All plant materials specified for the upland mitigation/revegetation areas will be native species appropriate to the area and the habitats being created/enhanced and will be compatible with the existing adjacent native habitat areas. Plant material selections, sizes, and quantities will be appropriate to help assure adequate plant establishment and to help achieve the goal of self sustainability of the revegetated habitats by the end of an initial 5-year time frame. A mixture of container plantings and seeding will be utilized as appropriate to the areas being planted and as specified on the final conceptual mitigation plan and the final revegetation construction documents (i.e., plans, details, and specifications).

Soil conditions in the areas to be revegetated will be tested after finish grading operations are complete and shall be evaluated by a soil and plant laboratory in order to determine soil fertility and agricultural suitability for the intended vegetation and habitat types. Amending of infertile soils may be necessary if soils analysis results indicate that deficiencies exist within the site soils that could affect the growth of the intended native species. All amending requirements will be specified on the final revegetation construction documents.

### **3.4 On-Site Uplands Revegetation Mitigation and Monitoring Plan**

A written Final Uplands Mitigation and Monitoring Plan (Mitigation Plan) report will be prepared to outline the intended upland mitigation/revegetation program for the on-site open space locations as well as the off-site locations. The Mitigation Plan will provide conceptual revegetation guidelines addressing the required mitigation program, the implementation procedures, maintenance strategies, monitoring and reporting requirements, and ultimate success standards/criteria by which the program will be evaluated. The Mitigation Plan will include the goals of the program and the implementation guidelines and will include preliminary plan view layouts (i.e., plans and graphics) showing the various intended on-site and off-site revegetation areas. The Mitigation Plan will also include plant palette tables indicating the intended revegetation species, their intended size, spacing on center, densities, and compositions for the various intended upland creation and enhancement areas.



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### **3.5 Final Revegetation Construction Documents**

A set of final revegetation construction documents (i.e., plans, details, and specifications) will be prepared by a State of California registered landscape architect/habitat restoration designer in order to implement the biological intent for the various upland mitigation/revegetation areas, as outlined in the Mitigation Plan. The construction documents shall be prepared for all on-site and off-site mitigation/revegetation areas. The plans may either be a comprehensive set of drawings showing all sites, or separate sets of drawings, depending upon the intended revegetation/mitigation implementation, construction, and phasing strategies. The construction documents shall detail all site preparation, grading, irrigation, planting, seeding, and maintenance requirements for the implementation of the on-site and off-site upland mitigation/revegetation areas. The construction documents shall be of sufficient detail for bidding and construction of the mitigation/revegetation areas.

The construction documents shall be reviewed and approved by the County and the appropriate resource agencies as necessary, based upon the final permitting requirements, prior to actual implementation.

### **3.6 Implementation Requirements**

All upland mitigation/revegetation areas will be installed per the requirements outlined in the final revegetation construction documents (i.e., plans, details, and specifications) and shall be maintained for an initial 120-day plant establishment maintenance period. The implementation and maintenance shall be conducted by a licensed Landscape Contractor (State of California C-27) familiar with native habitat restoration/revegetation projects. The contractor shall have a minimum of 3 years of experience in native habitat mitigation installation and maintenance, and shall be able to demonstrate the successful completion of a minimum of three wetland mitigation projects in Southern California.

The implementation of the upland mitigation program shall be monitored by a habitat restoration specialist/biologist familiar with the implementation of upland mitigation programs. The monitor shall verify and document the installation of the revegetation areas and shall monitor the installation and maintenance effort periodically as necessary during the installation, as well as throughout the initial 120-day plant establishment period. The monitor shall provide periodic site observation status reports and a final letter report at the end of the 120-day plant establishment period, in order to document the successful completion of the initial implementation phase, and to officially designate the start of the long-term 5-year maintenance and monitoring period.

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### **3.7 Maintenance Requirements**

All upland mitigation/revegetation areas will be maintained during an initial 120-day plant establishment maintenance period following installation and then throughout a 5-year maintenance and monitoring period, until successful fulfillment of the project's success standards/criteria. All maintenance procedures shall follow the guidelines established in the Mitigation Plan and the final conditions of the County and resource agencies. The primary goals will be to help foster adequate plant establishment, as well as to control non-native weeds and exotic/invasive plant species, so that the intended native species and habitats can develop and establish over time as anticipated. The maintenance contractor shall provide sufficient maintenance to assure survival of the mitigation/revegetation plantings until they can survive on their own without artificial support and can become self sustaining.

### **3.8 Monitoring Requirements**

All upland mitigation/revegetation areas will be monitored during the installation, including throughout the initial 120-day plant establishment period and then throughout the 5-year maintenance and monitoring period, in order to document the progress of the program and to help assure project success. Monitoring shall be conducted by a qualified habitat restoration specialist/biologist, in order to implement the biological intent for the mitigation/revegetation program. Qualifications for the monitor shall be outlined in the Mitigation Plan.

Biological monitoring will be conducted to evaluate the progress of the upland revegetation/mitigation program both qualitatively (i.e., visually) as well as quantitatively (i.e., data collection and analysis). Periodic monitoring visits and reporting will be conducted as specified in the Mitigation Plan. The project will be assessed against specific success standards and criteria as defined in the Mitigation Plan. Year-end monitoring reports will be prepared and submitted to the applicable parties and agencies as documentation of the progress of the project.

At the end of the designated 5-year maintenance and monitoring period, the monitor, on behalf of the client, shall solicit final acceptance from the County and the resource agencies. At that time, the project will be visited by all appropriate parties and agencies in order to determine completion of the 5-year program and acceptance by the permitting agencies. Evidence of final acceptance shall be provided in writing by the County and the agencies.

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### **3.9 Success Standards/Criteria**

Specific success standards/criteria shall be outlined in the Mitigation Plan. Criteria shall be established for the intended upland habitat types to be revegetated and/or enhanced as part of the overall upland mitigation program. The standards/criteria shall outline the intended goals and measures of success for each year of the program through 5 years, and will include percent cover of native species, percent cover of non-native/exotic species, and tree height goals for selected representative tree species. The criteria shall outline appropriate remedial measures and procedures that should be implemented in any given year should the success standards/criteria not be met.

### **3.10 Long-Term Management**

All upland mitigation areas shall ultimately become part of preserved biological open space on site and protected parcels off site, and shall be protected and managed in perpetuity. The on-site areas will be part of the on-site biological open space preserve area. All on-site upland mitigation areas will be managed as part of the overall open space area, per the long-term management measures outlined in the Resource Management Plan. All off-site mitigation areas shall be managed per the standards of the County.

## **4.0 LITERATURE CITED**

Dudek. 2007. Merriam Mountains Specific Plan, Appendix F, Resource Protection Study.

San Diego, County of. 2007. Department of Planning and Land Use. San Diego County Code, Section 86.601 et seq. Resource Protection Ordinance.